ABSTRACT

5   A method and apparatus are provided for performing electronic equalization in optical communication systems. Coefficient values in equalizers, such as feed forward equalizers or decision feedback equalizers, are updated using higher-order algorithms in the Least-Mean-2Nth-Order family. An optical receiver includes a photo-detector for converting a received optical signal to an electrical signal; and an equalizer

10   for removing intersymbol interference from the electrical signal, wherein coefficients of the equalizer are updated based upon a least-mean $2N^{th}$-order (LMN) algorithm (N is greater than one). Feed forward equalizer and decision feedback equalizer implementations are disclosed. The non-symmetric nature of optical noise is addressed by varying A slicer threshold based on an incoming signal distribution to reduce bit errors.

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